EDITORIAL

Re-interpreting the past: zoologist as ecological historian

In this edition, Bob Paddle's well-written piece begins: "Species depart the biota, not with a bang but a whimper. The Thylacine, Tasmania Tiger or Marsupial Wolf, *Thylacinus cynocephalus*, is one of a handful of species . . . where the whimper has a precise date." Australians, and Australian zoologists in particular, grieve the extinction of the Thylacine. Its demise is now a textbook example of a conspicuous species that slid into extinction in public view. The details of this fascinating species have yet to be properly explored, but Paddle's research makes a significant contribution by finding and re-assembling some of the fragments. Paddle has described how the Royal Zoological Society of New South Wales was a bit player in the saga, and has provided our journal's readers with a thorough history of the Society's records of the Thylacine. It is only by such painstaking work shall we recover what little was recorded of the largest marsupial carnivore extant at the time of European colonization.

The theme of this edition of the *Australian Zoologist* is re-interpreting the past with an ecological eye. The paper by Harry Recher, Pat Hutchings and Sue Rosen on the fauna of the Hawkesbury-Nepean is a major exercise in ecological reconstruction. Here, two zoologists have linked forces with historian Sue Rosen to provide a timetable of changes in the river system, where major environmental degradation was initiated by European settlement in 1788. The picture presented by the authors is a telling reflection of the entire span of European culture in Australia. The authors acknowledge that their historical explorations could have gone further. One reviewer pointed to the lack of detailed attention to frogs and reptiles in this eco-historical study, but this should serve as a challenge to other zoologists to re-interpret the current fauna, other than that focused on by Recher *et al.*, in the context of past environmental changes. The December 1993 edition of *Australian Zoologist* will be devoted to Australian herpetology, and that could serve as an incentive to fellow zoologists to examine carefully the habitats of the Hawkesbury-Nepean. Undoubledly they will draw on the zoological and historical context provided by Recher, Hutchings and Rosen.

The front cover is a splendid view of a breaching Humpback Whale *Megaptera novaengliae*. This magnificent creature is on the list of marine mammals examined by Michael Bryden in his assessment of their status in the Antarctic marine ecosystem. That the organizing committee of the Sixth International Theriological [Mammal] Conference (held at the University of New South Wales in July 1993) selected Bryden to present the plenary paper on marine mammals acknowledges his authority and experience in this field. His review of the status of the marine mammals, and of the ecosystem that sustains them, depended upon a valuable set of records, without which the capacity of zoologists to comprehend the trends would be significantly reduced.

It is said that a picture is worth a thousand words and the photographs illustrating the papers in this edition of *Australian Zoologist* give life to this adage. The historical photos of the Hawkesbury-Nepean not only depict what the authors are saying, but were themselves a source of interpretation. The fine set of photos and graphics that illustrate the paper on marine mammals allows one to glimpse the Antarctic. Few of us have been there, or expect to go there, so our impression is formed by words and pictures. Zoologists emphasize the need to carry out field work, and one of the best ways of recording what was seen is by photograph. In fact, it is the high quality photographs that help to make *Australian Natural History* (or ANH) a regular winner of the Whitley Award for the best natural history periodical. If photos are so powerful, it remains a mystery as to why scientific journals carry so few of them. There is an extra cost, both in the layout of the pages and in the choice of paper, but it is not much extra for black and white photos or line diagrams. As an enthusiast of illustrative material, I urged authors to contribute photos, graphics and maps for this edition of *Australian Zoologist*. Those that were submitted have undoubtedly enhanced the text and added a dimension not conveyed by words. The sequence of photos of the rare native rodent, the Hastings River Mouse *Pseudomys oralis*, included by David Read in his paper, led this editor to the observation that it looked strikingly similar to the Bush Rat *Rattus fuscipes*. In turn, this provoked the idea of suggesting adding an appendix to describe *P. oralis* so as to distinguish it from *R. fuscipes*. The similarity between these native rodents helps account for the lack of records of *P. oralis* for so long. This point demonstrates the importance of the visual zoological evidence, a point illustrated from a quite different environment, marine habitats, by the fine drawings of Trochids by Patty Jansen in her paper surveying the Sydney coast line for members of this mollusc family. Yet another visual perspective is provided by the excellent photos of a pistol shotgun in the paper by John Disney. They neatly complement the text and give the reader a close look at a museum-collecting technique as it passes into history.

Two papers in this edition feature bats. The paper by Murray Ellis describes mid-air collisions of the White-striped Mastiff Bat *Tadarida australis*, but there are no photos. Given the difficulty of seeing bats, and photographing them flying, it seems most unlikely that such collisions will soon be photographed. The elusiveness of bats helps to keep them from the public eye, and consequently it is more difficult to prepare a research programme or management strategy for these denizens of the night. So little has been previously recorded about Australia's bats that their ecological history is still in its infancy. To help its growth, the *Australian Zoologist* encourages zoologists to publish their bat work. Future workers will then be able to plot the development of the study of bats from these glimpses. In this vein, the paper by Wilson, Ellis and Williams, featuring a bat survey of the Macquarie Marshes, continues to raise the standard of bat survey, and the point has now been reached where the exclusion of bats in a contemporary mammal survey is no longer acceptable.

Both the paper by Ellis on the range extension of the Fawn Hopping Mouse *Notomys cervinus*, and the paper on the pattern of distribution and abundance of the Platypus in the rivers of New South Wales, as interpreted by Tom Grant in the light of mesh size in fish nets, give powerful insights into hitherto unrecognized changes following European settlement and exploitation. It takes considerable skill, and many years of patient, concentrated work in one area to be able to recreate the past through interpretation of the minutiae of skull bones and fish net size. Lardner, Ivanstoff and Crowley have patiently collected a 20-year record of a fish assemblage following defaunation of a marine rock pool. The authors recognize that such a long time sequence has not been previously recorded locally, and that the information gained shows that there is ample room now for experimental ecologists to understand and explain the pattern of changes over the years in a rock pool.

Among the numerous books reviewed in this edition of *Australian Zoologist* is one by Dorothy Tunbridge on the loss of mammals of the Flinders Ranges in South Australia, and the fascinating story of the reconstruction of the past through a skilled combination of anthropology, zoology and the memories of the local Aboriginal people. Such studies will become increasingly important as it becomes more widely recognized that today's stock of organisms is what remains after the often unrecorded impacts of European land-use changes. The decline of the fauna, its causes and consequences, are often difficult to interpret. At the moment, it is a sideline for those zoologists with an ecological outlook. In time, however, ecological history will become a properly recognized zoological and ecological discipline.

Recher *et al.* in their paper do not discuss their depression at the current toxic condition of the waters of the Hawkesbury that have recently made headlines. To them, it is the inevitable outcome of detrimental changes over a history of nearly 200 years which have gone unchecked. Their concern is to take a long-term view and to replace rights of use with responsibility, as Harry Recher so firmly states in his review of the Ehrlichs' book "Healing the Planet". Amanda Armstrong, in her paper on the responsibilities of the media in reporting the environment, reflects Harry Recher's view on contemporary responsibility, while the historical approach allows the possibility of restoring the environment by reinterpreting the influences upon it.

Daniel Lunney, Editor

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